Common strategy for the synthesis of angucycline, calothrixin and pluramycin skeletons

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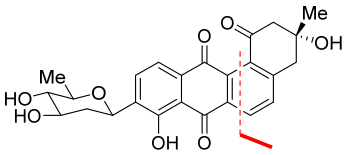
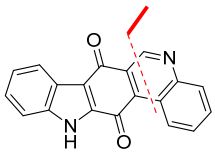
Abstract

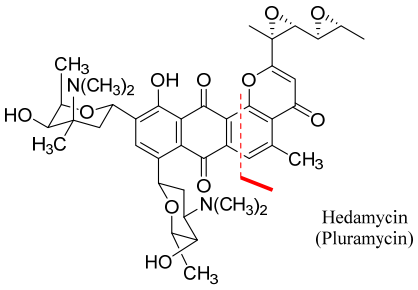
Aromatic polyketides represent important members of polyketides. They are often structurally complex natural products produced by diverse organisms and display a wide assortment of bioactive properties (antibiotic, antiviral, antifungal). Within this family of compounds, we can find for example urdamycinone (angucycline family), calothrixin B and hedamycin (Pluramycin family).



Urdamycinone B
(natural angucycline)

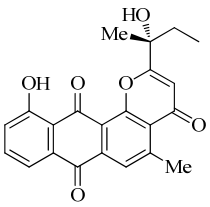


Calothrixin B



Hedamycin
(Pluramycin)

Interested in the structure-activity relationship of this type of molecules, we have developed a common strategy based on a hetero Diels-Alder reaction as a key step to synthesize aza-analogues of angucyclinone (ochromycinone analogues) and calothrixin B.[1a-c] This strategy is currently applied to the synthesis of pluramycin(one)s and last results concerning the synthesis of chiral non-racemic γ-indomycinone will be presented.[1d]



γ-Indomycinone

References :

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Key Words: Diels-Alder reaction, angucycline, pluramycin, calothrixin, indomycinone

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